

WHAT IS CLAIMED IS:

1. An image forming apparatus including  
applications and system side software for providing  
5 system side services to the applications, the image  
forming apparatus comprising:

an authentication module for displaying an  
authentication screen on an operation panel of the  
image forming apparatus, wherein the authentication  
10 module allows the image forming apparatus to display a  
screen for using the image forming apparatus instead of  
the authentication screen if authentication data input  
from the authentication screen satisfies an  
authentication condition,

15 wherein the authentication module is provided  
in the image forming apparatus separately from the  
system side software.

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2. The image forming apparatus as claimed in  
claim 1, wherein the system side software includes an  
authentication function part, and

25 wherein, when a specific application is

selected by a user, the image forming apparatus refers to information indicating correspondences between each application and the authentication module or the authentication function part, and performs  
5 authentication by using the authentication module or the authentication function part that corresponds to the specific application.

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3. The image forming apparatus as claimed in claim 1, the image forming apparatus further comprising a part for executing the authentication module from an  
15 external recording medium, or a part for loading the authentication module into the image forming apparatus from the external recording medium and executing the authentication module.

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4. The image forming apparatus as claimed in claim 1, the image forming apparatus further comprising  
25 an authentication module execution part for downloading

the authentication module from a server that is connected to the image forming apparatus via a network, and executing the authentication module.

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5. The image forming apparatus as claimed in  
claim 4, wherein the authentication module is a Java  
10 program, and the authentication module execution part  
includes a class library and a virtual machine.

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6. The image forming apparatus as claimed in  
claim 1, the image forming apparatus further comprising  
a communication part used for performing wireless data  
communications with a portable terminal,  
20 wherein the authentication module performs  
authentication by using authentication data received  
from the portable terminal via the communication part.

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7. The image forming apparatus as claimed in  
claim 6, the image forming apparatus further comprising  
a part for generating image data corresponding to a  
5 screen for prompting for authentication data in the  
portable terminal, and sending the image data to the  
portable terminal.

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8. The image forming apparatus as claimed in  
claim 1, wherein the authentication data includes a  
section name or a purpose of using an application.

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9. The image forming apparatus as claimed in  
20 claim 1, the image forming apparatus further comprising  
a part for displaying an authentication screen of the  
authentication module first when the image forming  
apparatus is started.

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10. The image forming apparatus as claimed in  
claim 1, wherein, if the image forming apparatus  
5 detects an end of a job, system auto clear, or a key  
input instructing to use the authentication module  
while the image forming apparatus displays a screen  
other than the authentication screen on the operation  
panel, the image forming apparatus displays the  
10 authentication screen instead of the screen other than  
the authentication screen.

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11. The image forming apparatus as claimed in  
claim 10, wherein, if the image forming apparatus  
detects elapse of a predetermined time after an end of  
a job, the image forming apparatus launches the system  
20 auto clear function and displays the authentication  
screen.

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12. The image forming apparatus as claimed in  
claim 1, the authentication module comprising a part  
for collecting log information relating to use of the  
image forming apparatus.

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13. The image forming apparatus as claimed in  
10 claim 12, wherein the authentication module collects a  
print completion notification as the log information,  
and displays a warning on the operation panel when the  
number of sheets printed reaches a predetermined number.

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14. An authentication method used for an  
image forming apparatus including applications and  
20 system side software for providing system side services  
to the applications, the image forming apparatus  
comprising an authentication module separately from the  
system side software,

wherein the authentication module displays an  
25 authentication screen on an operation panel of the

image forming apparatus, and allows the image forming apparatus to display a screen for using the image forming apparatus instead of the authentication screen if authentication data input from the authentication screen satisfies an authentication condition.

10                 15. The authentication method as claimed in claim 14, wherein the system side software includes an authentication function part, and

                       wherein, when a specific application is selected by a user, the image forming apparatus refers 15. to information indicating correspondences between each application and the authentication module or the authentication function part, and performs authentication by using the authentication module or the authentication function part that corresponds to 20 the specific application.

25                 16. The authentication method as claimed in

claim 14, wherein the image forming apparatus executes  
the authentication module from an external recording  
medium, or the image forming apparatus loads the  
authentication module from the external recording  
5 medium and executes the authentication module.

10                 17. The authentication method as claimed in  
claim 14, wherein the image forming apparatus downloads  
the authentication module from a server that is  
connected to the image forming apparatus via a network,  
and executes the authentication module.

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18. The authentication method as claimed in  
20 claim 14, the image forming apparatus further  
comprising a communication part used for performing  
wireless data communications with a portable terminal,  
wherein the authentication module performs  
authentication by using authentication data received  
25 from the portable terminal via the communication part.

5                 19. The authentication method as claimed in  
claim 14, wherein, if the image forming apparatus  
detects an end of a job, system auto clear, or a key  
input instructing to use the authentication module  
while the image forming apparatus displays a screen  
10 other than the authentication screen on the operation  
panel, the image forming apparatus displays the  
authentication screen instead of the screen other than  
the authentication screen.

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20. The authentication method as claimed in  
claim 14, wherein the authentication module collects  
log information relating to use of the image forming  
apparatus.

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21. A computer program to be executed on an image forming apparatus including applications and system side software for providing system side services to the applications, the computer program comprising:

5           program code means for displaying an authentication screen on an operation panel of the image forming apparatus;

              program code means for allowing the image forming apparatus to display a screen for using the  
10          image forming apparatus instead of the authentication screen if authentication data input from the authentication screen satisfies an authentication condition,

              wherein the computer program is provided in  
15          the image forming apparatus separately from the system side software.

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22. The computer program as claimed in claim 21, the image forming apparatus further comprising a communication part used for performing wireless data communications with a portable terminal,

25           wherein the computer program comprises

program code means for performing authentication by using authentication data received from the portable terminal via the communication part.

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23. The computer program as claimed in claim  
21, the computer program comprising program code means  
10 for collecting log information relating to use of the  
image forming apparatus.

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24. The computer program as claimed in claim  
23, the computer program comprising program code means  
for collecting a print completion notification as the  
log information, and displaying a warning on the  
20 operation panel when the number of sheets printed  
reaches a predetermined number.

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25. A computer readable medium storing a computer program to be executed on an image forming apparatus including applications and system side software for providing system side services to the 5 applications, the computer program comprising:

program code means for displaying an authentication screen on an operation panel of the image forming apparatus;

10 program code means for allowing the image forming apparatus to display a screen for using the image forming apparatus instead of the authentication screen if authentication data input from the authentication screen satisfies an authentication condition,

15 wherein the computer program is provided in the image forming apparatus separately from the system side software.

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26. The computer readable medium as claimed in claim 25, the image forming apparatus further comprising a communication part used for performing 25 wireless data communications with a portable terminal,

wherein the computer program comprises  
program code means for performing authentication by  
using authentication data received from the portable  
terminal via the communication part.

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27. The computer readable medium as claimed  
10 in claim 25, the computer program comprising program  
code means for collecting log information relating to  
use of the image forming apparatus.

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28. The computer readable medium as claimed  
in claim 27, the computer program comprising program  
code means for collecting a print completion  
20 notification as the log information, and displaying a  
warning on the operation panel when the number of  
sheets printed reaches a predetermined number.

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